

### **Remarks**

Claims 2-31 and 34 are pending in the present application. Claims 1, 32 and 33 were previously canceled without prejudice. Claims 2-31 and 34 stand rejected. In this paper, Applicant has amended claims 2-4, 7, 10, 12, 15, 18, 23, 25, 30, and 34, and certain paragraphs of the specification. Applicant believes that no new matter has been added by the amendments to the claims and specification.

#### **Claim Rejections – 35 U.S.C. § 112**

Claims 2-31 and 34 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The Examiner contends that the phrase “from a source other than a prior location determined by the satellite positioning receiver” is not supported in the original specification such that the phrase constitutes new matter. While Applicant disagrees, and therefore traverses this rejection, Applicant has deleted the above-quoted phrase from the claims to expedite prosecution. Accordingly, Applicant respectfully submits that this rejection is moot, and therefore respectfully requests that the rejection be withdrawn.

#### **Claim Rejections – 35 U.S.C. § 102**

Claims 2-31 and 34 are rejected under 35 U.S.C. § 102(b) as being anticipated by Ptasinski et al. (non-patent publication). Applicant respectfully traverses this rejection for the reasons set forth below.

Independent claim 2 is directed to a “satellite positioning receiver” comprising a “navigation processor” and a “location.” The “location” is data or information that is “determined from initial digital terrain elevation data used to calculate a solution . . .” The remaining portions of claim 2 further describe the location. Applicant has amended claim 2 to recite “a horizontal error ellipse parameter in the altitude equation that forms an error ellipse having a major axis and a minor axis that corresponds to the altitude error,” “a plurality of points along the major axis and the minor axis that form a grid of grid points,” and “a two-dimensional polynomial surface fit over the grid points.” As a general matter, none of the prior art cited in the application, including Ptasinski et al., teach or suggest fitting a two-dimensional polynomial to an error ellipse and utilizing this polynomial as an altitude equation in determining the position of the receiver.

Ptasinski et al. merely teaches, in Figs. 1 and 2 and pp. 452-453, the known WGS-84 ellipsoid model in conjunction with a “simulation . . . carried out to determine the inaccuracy of locating a pseudo-satellite at the centre of the Earth (see Figure 2).” *See* Ptasinski et al., p. 452. Ptasinski et al. discusses the different inaccuracies resulting from (1) placing the center of a sphere at the center of the WGS-84 ellipsoid and (2) placing the center of a sphere at the point  $z_c$  shown in Figure 1, and concludes that the second approach yields more accurate results. *See* Ptasinski et al., pp. 452-453. Ptasinski et al. does not teach utilizing an error ellipse as part of altitude aiding for determining the final position solution of a receiver. Moreover, the only possible use of polynomial-based fitting in Ptasinski et al. relates to a situation in which a receiver is able to track more than four satellites. *See* Ptasinski et al., p. 454 (“Altitude aiding can be also used when a receiver tracks more than 4 satellites. . . The most common method to solve an over-determined set of equations is least squares”); p. 456 (“If the total number of equations is greater than four, then scale the altitude equation in order to calculate a least square

solution with an over-determined set of equations”). Thus, Applicant respectfully submits that claim 2 does not read on Ptasinski et al.

Claims 3-9 depend directly or indirectly from claim 2, and therefore are distinguishable over Ptasinski et al. for the same reasons as set forth above with regard to claim 2.

Independent claim 10 recites “solving the at least three simultaneous equations with the average height and the average height error that results in a position and a corresponding horizontal error ellipse,” and “fitting a two-dimensional polynomial to the corresponding horizontal error ellipse.” Claim 10 is therefore distinguishable over Ptasinski et al. for the same reasons as set forth above with regard to claim 2.

Claims 11-17 depend directly or indirectly from claim 10, and therefore are distinguishable over Ptasinski et al. for the same reasons as set forth above with regard to claim 10.

Independent claim 18 recites “means for solving the at least three simultaneous equations with the average height and the average height error that results in a position and a corresponding horizontal error ellipse,” and “means for fitting a two-dimensional polynomial to the corresponding horizontal error ellipse.” Claim 18 is therefore distinguishable over Ptasinski et al. for the same reasons as set forth above with regard to claim 2.

Claims 19-24 depend directly or indirectly from claim 18, and therefore are distinguishable over Ptasinski et al. for the same reasons as set forth above with regard to claim 18.

Independent claim 25 recites “means for solving the at least three simultaneous equations with the average height and the average height error that results in a position and a corresponding horizontal error ellipse,” and “means for fitting a two-dimensional polynomial to the

corresponding horizontal error ellipse.” Claim 25 is therefore distinguishable over Ptasinski et al. for the same reasons as set forth above with regard to claim 2.

Claims 26-31 depend directly or indirectly from claim 25, and therefore are distinguishable over Ptasinski et al. for the same reasons as set forth above with regard to claim 25.

Independent 34 as amended recites “a horizontal error ellipse parameter in an altitude equation that forms an error ellipse having a major axis and a minor axis that corresponds to an altitude error about the initial height,” “a plurality of points along the major axis and the minor axis that form a grid of grid points,” and “a two-dimensional polynomial surface fit over the grid points.” Claim 34 is therefore distinguishable over Ptasinski et al. for the same reasons as set forth above with regard to claim 2.

In view of the foregoing, Applicant respectfully submits that claims 2-31 and 34 are patentable under 35 U.S.C. § 102(b) over Ptasinski et al., and therefore respectfully request that this rejection be withdrawn.

### Conclusion

In light of the above remarks, it is respectfully submitted that the present application is now in proper condition for allowance, and an early notice to such effect is earnestly solicited.

If any small matter should remain outstanding after the Patent Examiner has had an opportunity to review the above Remarks, the Patent Examiner is respectfully requested to telephone the undersigned patent attorney in order to resolve these matters and avoid the issuance of another Office Action.

Respectfully submitted,

THE ECLIPSE GROUP LLP

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By:



Attorney for Assignee

David P. Gloekler

Registration No. 41,037

**The Eclipse Group LLP**

5003 Southpark Dr., Suite 260

Durham, NC 27713

(919) 313-6163 Telephone

(919) 313-6170 Facsimile

Customer No. 34408